



Protein  for     
 Limits

P14174 . MACROPHAGE MIGRATI...[gi:1170955]

LOCUS MIF\_HUMAN 115 aa PRI 01-NOV-1997  
DEFINITION MACROPHAGE MIGRATION INHIBITORY FACTOR (MIF)  
(GLYCOSYLATION-INHIBITING FACTOR) (GIF).  
ACCESSION P14174  
PID g1170955  
VERSION P14174 GI:1170955  
DBSOURCE swissprot: locus MIF\_HUMAN, accession P14174;  
class: standard.  
created: Jan 1, 1990.  
sequence updated: Nov 1, 1995.  
annotation updated: Nov 1, 1997.  
xrefs: gi: 312331, gi: 312334, gi: 188555, gi: 188556, gi: 187180,  
gi: 187181, gi: 402701, gi: 402702, gi: 307284, gi: 307285, gi:  
106943, gi: 423077  
xrefs (non-sequence databases): SWISS-2DPAGE P14174, MIM 153520,  
PFAM PF01187, PROSITE PS01158  
KEYWORDS Macrophage; Inflammatory response; Cytokine; 3D-structure.  
SOURCE human.  
ORGANISM Homo sapiens  
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Mammalia;  
Eutheria; Primates; Catarrhini; Hominidae; Homo.  
REFERENCE 1 (residues 1 to 115)  
AUTHORS Weisel,W.Y., Temple,P.A., Witek-Giannotti,J.S., Remold,H.G.,  
Clark,S.C. and David,J.R.  
TITLE Molecular cloning of a cDNA encoding a human macrophage migration  
inhibitory factor  
JOURNAL Proc. Natl. Acad. Sci. U.S.A. 86 (19), 7522-7526 (1989)  
MEDLINE 90017510  
REMARK SEQUENCE FROM N.A.  
REFERENCE 2 (residues 1 to 115)  
AUTHORS Paralkar,V. and Wistow,G.  
TITLE Cloning the human gene for macrophage migration inhibitory factor  
(MIF)  
JOURNAL Genomics 19 (1), 48-51 (1994)  
MEDLINE 94245178  
REMARK SEQUENCE FROM N.A.  
REFERENCE 3 (residues 1 to 115)  
AUTHORS Mikayama,T., Nakano,T., Gomi,H., Nakagawa,Y., Liu,Y.C., Sato,M.,  
Iwamatsu,A., Ishii,Y., Weiser,W.Y. and Ishizaka,K.  
TITLE Molecular cloning and functional expression of a cDNA encoding  
glycosylation-inhibiting factor  
JOURNAL Proc. Natl. Acad. Sci. U.S.A. 90 (21), 10056-10060 (1993)  
MEDLINE 94052102  
REMARK SEQUENCE FROM N.A.  
REFERENCE 4 (residues 1 to 115)  
AUTHORS Wistow,G.J., Shaughnessy,M.P., Lee,D.C., Hodin,J. and Zelenka,P.S.  
TITLE A macrophage migration inhibitory factor is expressed in the  
differentiating cells of the eye lens  
JOURNAL Proc. Natl. Acad. Sci. U.S.A. 90 (4), 1272-1275 (1993)  
MEDLINE 93165679  
REMARK SEQUENCE OF 9-114 FROM N.A.  
TISSUE=LENS  
REFERENCE 5 (residues 1 to 115)  
AUTHORS HOCHSTRASSER,D.F., FRUTIGER,S., PAQUET,N., BAIROCH,A., RAVIER,F.,  
PASQUALI,C., SANCHEZ,J.-C., TISSOT,J.-D., BJELLOQVIST,B., VARGAS,R.,  
APPEL,R.D. and HUGHES,G.J.  
TITLE Human liver protein map: a reference database established by  
microsequencing and gel comparison  
JOURNAL Electrophoresis 13 (12), 992-1001 (1992)  
MEDLINE 93162045  
REMARK SEQUENCE OF 1-10.  
TISSUE=LIVER  
REFERENCE 6 (residues 1 to 115)  
AUTHORS Zeng,F.Y., Weiser,W.Y., Kratzin,H., Stahl,B., Karas,M. and  
Gabius,H.J.  
TITLE The major binding protein of the interferon antagonist sarcolectin  
in human placenta is a macrophage migration inhibitory factor  
JOURNAL Arch. Biochem. Biophys. 303 (1), 74-80 (1993)  
MEDLINE 93256574  
REMARK SEQUENCE OF 2-23.  
REFERENCE 7 (residues 1 to 115)  
AUTHORS Sugimoto,H., Suzuki,M., Nakagawa,A., Tanaka,I. and Nishihira,J.

TITLE Crystal structure of macrophage migration inhibitory factor from human lymphocyte at 2.1 Å resolution  
 JOURNAL FEBS Lett. 389 (2), 145-148 (1996)  
 MEDLINE 96338096  
 REMARK X-RAY CRYSTALLOGRAPHY (2.1 ANGSTROMS).  
 REFERENCE 8 (residues 1 to 115)  
 AUTHORS Kato,Y., Muto,T., Tomura,T., Tsumura,H., Watarai,H., Mikayama,T., Ishizaka,K. and Kuroki,R.  
 TITLE The crystal structure of human glycosylation-inhibiting factor is a trimeric barrel with three 6-stranded beta-sheets  
 JOURNAL Proc. Natl. Acad. Sci. U.S.A. 93 (7), 3007-3010 (1996)  
 MEDLINE 96181524  
 REMARK X-RAY CRYSTALLOGRAPHY (1.9 ANGSTROMS).  
 REFERENCE 9 (residues 1 to 115)  
 AUTHORS Sun.H.W., Bernhagen,J., Bucala,R. and Lolis,E.  
 TITLE Crystal structure at 2.6-Å resolution of human macrophage migration inhibitory factor  
 JOURNAL Proc. Natl. Acad. Sci. U.S.A. 93 (11), 5191-5196 (1996)  
 MEDLINE 96224258  
 REMARK X-RAY CRYSTALLOGRAPHY (2.6 ANGSTROMS).  
 COMMENT On Jan 29, 1996 this sequence version replaced gi:127090.

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[FUNCTION] THE EXPRESSION OF MIF AT SITES OF INFLAMMATION SUGGEST A ROLE FOR THE MEDIATOR IN REGULATING THE FUNCTION OF MACROPHAGE IN HOST DEFENSE.

[SUBUNIT] HOMOTRIMER.

[DISEASE] MIF ACTIVITY HAS BEEN DETECTED IN LEUKOCYTE CULTURE SUPERNATANTS OF MICE DURING ALLOGRAFT REJECTION, IN THE SYNOVIA OF PATIENTS WITH RHEUMATOID POLYARTHRITIS, AND IN A VARIETY OF CHRONIC INFLAMMATORY LOCI.

[SIMILARITY] BELONGS TO THE MIF FAMILY.

FEATURES	Location/Qualifiers
source	1..115 /organism="Homo sapiens" /db_xref="taxon:9606"
Protein	1..115 /product="MACROPHAGE MIGRATION INHIBITORY FACTOR"
Region	106 /region_name="Conflict" /note="N -> S (IN REF. 1).."

ORIGIN  
 1 mpmfivntv prasvpdgfl seltqqlaqa tgkppqyiaav hvvpdqmaf ggssepcalc  
 61 slhsigkigg aqnrsyskll cgllaerlri spdrvyyinyy dmnaanvgwn nstfa  
 //

January 10, 2000.

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